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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,412	11/13/2003	Ranjeeta Singh	5038-336	2039

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EXAMINER	
HO, DUC CHI	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
06/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,412	SINGH ET AL.	
	Examiner	Art Unit	
	Duc C. Ho	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12-13-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over byYavatkar et al.(US 2003/0128668), hereinafter referred to as Yavatkar, in view of Putzolu (Software API framework implementation agreement-IDS record).

Regarding claim 1, Yavatkar discloses distributed implementation of control protocols in routers and switches. Figure 2 discloses an architecture of a router 20.

at least one control processor (the control-plane 22 includes a processor 23-fig.2, see 0016);

at least one forwarding processor (the router 20-fig 2 also includes a forwarding processor 25, see 0017);

at least one ingress interface for connecting the network device to a network (the physical ports 28-fig.2 are the ingress interface, see 0018);

Yavatkar, however, does not teach a virtual interface interposed between the control processor and the ingress interface to receive a packet from the ingress interface, and determine if it is compatible with an operating system running on the control processor, and, if necessary, convert it to a compatible format for the operating system.

One skill in the art would recognize the advantage of employing a virtual module functioning as a packet handler to provide a path for applications to send and receive packets through forwarding elements, and to convert the protocol of the packets for compatiblity with one running on the control processor if necessary.

Putzolu discloses software API framework implementation agreement. The packet handler-fig.4 provides a path for applications to send and receive packets through forwarding elements, and inherently converting the protocol of the packets for compatibility with one running on the control processor if necessary, see 3.2.1 and 3.2.2, page 9.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Putzolo with Yavatka.

The suggestion/motivation for doing so would have been to provide a path for applications to send and receive packets through forwarding elements, and to ensure the protocol of the packets compatible with one running on the control processor

Therefore, it would have been obvious to combine Putzolo with Yavatka to obtain the invention as specified in claim 1.

Regarding claim 2, Yavatkar discloses the control in a router.

Regarding claim 3, Yavatkar discloses the control in a switch.

Regarding claim 4, the processor 23-fig. 2 and forwarding processors of Yavatka could be configured to run different protocols or operating systems.

Regarding claim 5, in Putzolo the packet handler could be constructed and arranged to receive a packet from the processor 23-fig.2 of Yavatka, and processing the packet in accordance with the required protocol, see Putzolo at 5.2, page 14.

Regarding claim 6, in Yavatka the physical ports 28-fig.2 should include egress interfaces, see 0018.

Regarding claim 7, in Putzolo the packet handler could be further constructed and arranged in such a way to select an appropriate control port to receive the packet.

Regarding claim 8, the router of Yavatka could be adapted to include processors using broad categories of protocols taught by Putzolo, and the packet handler of Putzolo could be constructed and arranged to direct packets to one of the control processors in accordance with the required protocol.

Regarding claims 9-15, these claims have similar limitations as claims 1-4, 8, 5-6, respectively. Therefore, they are rejected under Yavatka-Putzolo for the same reasons set forth in the rejection of claims 1-4, 8, 5-6.

Regarding claim 16, the claim has similar limitations as claim 1. Therefore, it is rejected under Yavatka-Putzolo for the same reasons set forth in the rejection of claim 1.

Regarding claim 17, in Yavatka a packet can be forwarded to a control processor 23-fig.2.

Regarding claim 18, in Yavatka the router 20-fig.2 is used for routing the data packet.

Regarding claim 19, the router of Yavatka could be adapted to include processors using broad categories of protocols taught by Putzolo, and the packet handler of Putzolo could be constructed and arranged to direct packets to one of the control processors in accordance with the required protocol.

Regarding claim 20, the claim has similar limitations as claim 16. Therefore, it is rejected under Yavatka-Putzolo for the same reasons set forth in the rejection of claim 16. The processor 23-fig. 2 of Yavatka is configured to execute instructions to perform the steps of the claim.

Regarding claim 21 the claim has similar limitations as claim 16. Therefore, it is rejected under Yavatka-Putzolo for the same reasons set forth in the rejection of claim 16. The instructions to be executed should be stored in a computer-readable medium.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kouvelas (US 2004/0205215); Roumas (US 6,985,493) are cited to show implementation of control plane protocols and networking stacks in a distributed network device, which is considered pertinent to the claimed invention.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Duc Ho

06-19-07